

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A magnetic recording medium comprising:

a non-magnetic base material;

a ferromagnetic metal layer of a cobalt based alloy formed on top of said non-magnetic base material; and

a metal underlayer disposed between said base material and said ferromagnetic metal layer, wherein,

a coercive force  $H_c$  is at least 2000 (Oe),

an anisotropic magnetic field  $H_k^{\text{grain}}$  is at least 10,000(Oe), and

said metal underlayer incorporates an underfilm of either one of Cr and a Cr alloy, ~~and said Cr alloy also incorporates~~ comprising Mo and/or W,

wherein a lattice misfit of said metal underlayer and said ferromagnetic metal layer, as determined by an equation  $(y-x) / (x/2 + y/2) \cdot 100(\%)$ , in which x represents a length obtained by multiplying by square root of 2 a lattice constant of said metal underlayer and y represents a c axis length of a

crystal lattice of said ferromagnetic metal layer, is a value from 0.5% to 2.5%, and

an axial length ratio  $a/b$  of an interatomic distance  $a$  in a direction of a normal line to said ferromagnetic metal layer relative to an interatomic distance  $b$  in a direction within a plane of said ferromagnetic metal layer is within a range from 1.002 to 1.008.

2. (original) A magnetic recording medium according to claim 1, wherein said metal underlayer and said ferromagnetic metal layer are formed in a film fabrication chamber with an ultimate vacuum at a  $10^{-9}$  Torr level, using a film fabrication gas with an impurity concentration of no more than 1 ppb.

3. (canceled)

4. (currently amended) A magnetic recording medium according to claim 1, wherein said metal underlayer incorporates an underfilm of either one of i) Cr and ii) a Cr alloy comprising Mo and/or W, and ~~said Cr alloy incorporates at least one, or two or more elements~~ element selected from a group consisting of V, Nb, Hf, Zr, Ti, Mn, Ta, Ru, Re, Os, Ir, Rh, Pd, Pt, P, B, Si, Ge, N and O.

5. (currently amended) A magnetic recording medium according to ~~any one of~~ claim 1, wherein a film thickness of said metal underlayer is within a range from 3 nm to 20 nm.

6. (previously presented) A magnetic recording medium according to claim 1, wherein said metal underlayer comprises a layered structure of two or more underfilms with different lattice constants.

7. (original) A magnetic recording medium according to claim 6, wherein said metal underlayer is a two layered construction with a second underfilm layered on top of a first underfilm, and a film thickness ratio  $t_2/t_1$  of a film thickness  $t_1$  of said first underfilm and a film thickness  $t_2$  of said second underfilm is within a range from 0.2 to 5.0.

8. (original) A magnetic recording medium according to claim 7, wherein a film thickness of said first underfilm is within a range from 1.5 nm to 8.5 nm.

9. (previously presented) A magnetic recording medium according to claim 7, wherein a film thickness of said second underfilm is within a range from 1.5 nm to 8.5 nm.

10. (canceled)

11. (currently amended) A magnetic recording medium according to claim [[10]] 1, wherein said lattice misfit of said metal underlayer and said ferromagnetic metal layer is a value from 0.5% to 1.5%.

12. (currently amended) A magnetic recording medium according to claim 1, wherein in a crystal lattice of said ferromagnetic metal layer of said cobalt based alloy, [[an]] said

interatomic distance a in a direction of a normal line to said ferromagnetic metal layer is larger than  $[\alpha]$  said interatomic distance b in a direction within a plane of said ferromagnetic metal layer.

13-16. (canceled)

17. (previously presented) A magnetic recording device comprising a magnetic recording medium according to claim 1, a drive section for driving said magnetic recording medium, and a magnetic head for carrying out recording and playback of magnetic information, wherein said magnetic head performs recording and playback of magnetic information on a moving said magnetic recording medium.

18. (canceled)

19. (previously presented) A magnetic recording medium according to claim 2, wherein said metal underlayer comprises a layered structure of two or more underfilms with different lattice constants.

20. (previously presented) A magnetic recording medium according to claim 1, wherein said metal underlayer comprises a layered structure of two or more underfilm with different lattice constants.

21. (currently amended) A magnetic recording medium, comprising:

a non-magnetic base material;

a metal underlayer formed on top of said non-magnetic base material and incorporating an underfilm of either one of Cr and a Cr alloy incorporating Mo or W; and

a ferromagnetic metal layer of a cobalt based alloy formed on top of said non-magnetic base material and said ~~ferromagnetic metal layer~~ underlayer so that said metal underlayer is disposed between said base material and said ferromagnetic metal layer, wherein,

at a same time, a coercive force  $H_c$  is at least 2000 (Oe), and an anisotropic magnetic field  $H_k^{\text{grain}}$  is at least 10,000 (Oe),

a lattice misfit of said metal underlayer and said ferromagnetic metal layer, as determined by an equation  $(y-x) / (x/2 + y/2) \cdot 100(\%)$ , in which x represents a length obtained by multiplying by square root of 2 a lattice constant of said metal underlayer and y represents a c axis length of a crystal lattice of said ferromagnetic metal layer, is a value from 0.5% to 2.5%, and

an axial length ratio  $a/b$  of an interatomic distance a in a direction of a normal line to said ferromagnetic metal layer relative to an interatomic distance b in a direction within a plane of said ferromagnetic metal layer is within a range from 1.002 to 1.008.

22. (previously presented) The magnetic recording medium of claim 21, wherein, said underfilm comprises the Cr alloy incorporating Mo.

23. (previously presented) The magnetic recording medium of claim 21, wherein, said underfilm comprises the Cr alloy incorporating W.

24. (previously presented) The magnetic recording medium of claim 21, wherein, said underfilm comprises the Cr alloy incorporating Mo and W.